



ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OLEM–2022–0340, FRL–9842-01-OLEM]

Development of Best Practices for Collection of Batteries to be Recycled and Voluntary Battery Labeling Guidelines; Request for Information

AGENCY: Environmental Protection Agency (EPA).

ACTION: Request for Information (RFI).

SUMMARY: EPA is developing best practices with respect to the collection of batteries to be recycled, as well as establishing a program to promote battery recycling through the development of voluntary labeling guidelines for batteries and communication materials for battery producers and consumers as directed by the Infrastructure Investment and Jobs Act of 2021. To aid in the implementation of these directives, the Office of Resource Conservation and Recovery (ORCR) within the Environmental Protection Agency (EPA) requests information on the end-of-life management of batteries, including information on their generation, collection, recycling, reuse, as well as the current labeling standards/requirements for batteries regarding their end-of-life. EPA is interested in both single-use batteries, also known as primary batteries, and rechargeable batteries, also known as secondary batteries. This includes lithium based, nickel-metal hydride, and other battery chemistries, as well as all battery types, such as small consumer batteries, large format batteries (including electric vehicles and grid energy storage), and industrial batteries used in manufacturing, commercial businesses, and healthcare operations. ORCR is also seeking information about how consumers, businesses, entities in the vehicle management chain (dealerships, repair shops, auction houses, dismantlers, entities that repurpose electric vehicle batteries, refurbishers, and scrap yards), and others are educated on how to manage batteries at the end-of-life. Information from a wide range of stakeholders involved in the battery lifecycle from its manufacture to its end-of-life management, including but not limited to industry stakeholders, researchers, academia, state, tribal, and local governments including U.S. territories

and the District of Columbia, other federal agencies, community groups, non-governmental organizations, the public, and international organizations.

DATES: Written comments and information must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. EPA will also hold feedback sessions with an opportunity to provide live, verbal feedback. The dates and times for those feedback sessions will be posted on: <https://www.epa.gov/rcra/feedback-sessions-bipartisan-infrastructure-law-solid-waste-and-recycling-programs>. To stay connected about these feedback sessions subscribe to: <https://www.epa.gov/recyclingstrategy/forms/stay-connected>.

ADDRESSES: EPA invites submission of the requested information through one of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the online instructions for submitting your comments, identified by Docket ID No. EPA-HQ-OLEM-2022-0340.
- *Hand Delivery or Courier:* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

Instructions: All submissions received must include the Docket ID No. EPA-HQ-OLEM-2022-0340 for this notice. Comments received may be posted without change to <https://www.regulations.gov/>, including any personal information provided. For detailed

instructions on sending comments see the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For questions concerning this document, contact Rita Chow, Resource Conservation and Sustainability Division, Office of Resource Conservation and Recovery, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Mail Code 5306T, Washington DC 20460; telephone number: (202) 566-0227; email address: Batteries@epa.gov. For more information on this action please visit <https://www.epa.gov/rcra/infrastructure>.

SUPPLEMENTARY INFORMATION:

I. Public Participation

Response to this RFI is voluntary. Responses to this RFI may be submitted by a single party or by a team. Respondents should respond to this RFI in a Microsoft Word (.docx) file or Adobe PDF (.pdf) file. This document should contain the following:

- Two clearly delineated sections: (1) Cover page with company name and contact information; and (2) responses should indicate which topic and specific questions are being addressed.
- 1-inch margins (top, bottom, and sides).
- Times New Roman and 12-point font.

Comments containing references, studies, research, and other empirical data that are not widely published should include copies or electronic links of the referenced materials. No confidential and/or business proprietary information, copyrighted information, or personally identifiable information should be submitted in response to this RFI. *Privacy Note:* All comments received from members of the public will be available for public viewing on Regulations.gov. In accordance with FAR 15.202(3), responses to this notice are not offers and cannot be accepted by the Federal Government to form a binding contract. Additionally, those submitting responses are solely responsible for all expenses associated with response preparation.

II. General Information

A. What is the purpose of this RFI?

Under the Infrastructure Investment and Jobs Act (Public Law 117-58), also known as the Bipartisan Infrastructure Law, EPA is directed to develop several new solid waste recycling programs. This RFI covers the following programs established by the Bipartisan Infrastructure Law:

- The development of best practices that may be implemented by state, tribal, and local governments with respect to the collection of batteries to be recycled that is—technically and economically feasible; environmentally sound and safe for waste management workers; and optimize the value and use of material derived from recycling of batteries; and
- The establishment of a program to promote battery recycling through the development of voluntary labeling guidelines for batteries and other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. The purpose of the program is to improve battery collection and reduce battery waste by—identifying battery collection locations and increasing accessibility to those locations; promoting consumer education about battery collection and recycling; and reducing safety concerns relating to the improper disposal of batteries. EPA is also interested in the creation of labeling guidelines as a helpful tool in providing information to battery manufacturers about the recyclability of their products. EPA is interested in how the voluntary labeling guidelines might apply to small format, large format, and industrial batteries.

This RFI seeks information on both single-use batteries, also known as primary batteries, and rechargeable batteries, also known as secondary batteries; all battery chemistries, including but not limited to: lithium based, nickel-metal hydride, and other battery chemistries; and all battery types, such as small consumer batteries, large format batteries (including electric vehicles and grid energy storage), and industrial batteries used in manufacturing, commercial businesses, and healthcare operations, to inform the scope of the battery collection best practices, voluntary

labeling guidelines for batteries, and other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. This RFI seeks input from all stakeholders involved in the battery lifecycle from its manufacture to its end-of-life management—including but not limited to the public, industry, researchers, academia, state, tribal, and local governments, including U.S. territories and the District of Columbia, other federal agencies, community groups, non-governmental organizations, and international organizations. In addition to stakeholders involved with small consumer batteries, EPA also is interested in obtaining input from stakeholders involved with large format batteries (including electric vehicles and grid energy storage), and industrial batteries used in manufacturing, commercial businesses, and healthcare operations. This stakeholder input will inform the Agency's efforts to develop best practices with respect to the collection of batteries to be recycled, as well as to establish a program to promote battery recycling through the development of voluntary labeling guidelines for batteries and other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries.

This RFI is part of a series of RFIs EPA will be issuing to inform the development of new programs under the Bipartisan Infrastructure Law. Other RFIs that are related include those on the *Solid Waste Infrastructure for Recycling Grant Program* and the *Recycling Education and Outreach – Grant Program and Model Recycling Program Toolkit*. In addition, the U.S. Department of Energy will be issuing future information requests to advise their work to support battery recycling under the Bipartisan Infrastructure Law, which includes several grant programs to support battery collection, safe storage and transportation, recycling, and second-use.

III. Background

Critical materials, such as lithium, are key resources needed to manufacture products for the clean energy economy, including wind turbines, solar panels, and electric vehicles. However, supply chain disruptions associated with these valuable resources introduce uncertainty and

instability in the production of these essential technologies. For example, reliable supplies of lithium and cobalt are needed to manufacture lithium-ion batteries which are used for electric vehicles and grid energy storage.

In 2019, the U.S. Department of Commerce issued a *Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals*,¹ which included an action to improve understanding of domestic critical mineral resources, including secondary sources. In February 2021, President Biden signed Executive Order 14017, Executive Order on America's Supply Chains,² to improve supply chain security for the U.S. Government and U.S. companies. In June 2021, the White House released its *Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth*³ report, which included a recommendation to build a foundation for accelerated growth in strategic and critical material recycling and recovery. The Bipartisan Infrastructure Law investments for both EPA and DOE in battery collection and recycling will help the nation strengthen and build more resilient supply chains.

Batteries are important sources of critical minerals.⁴ Depending on the battery chemistry, critical minerals used in the manufacture of batteries include antimony, cobalt, graphite, lithium, manganese, and nickel. Batteries power many of the consumer devices, electronics and vehicles used in people's daily lives from household appliances to laptops, cell phones, wireless headphones, cameras, handheld gaming devices, cordless power tools, toys, flashlights, and other portable devices. Given the usefulness of batteries in these applications, especially lithium-ion batteries for electric vehicles, bikes, scooters, and grid energy storage, the demand for these

¹ <https://www.commerce.gov/data-and-reports/reports/2019/06/federal-strategy-ensure-secure-and-reliable-supplies-critical-minerals>

² <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/>

³ <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>

⁴ Strategic and critical minerals are any materials that are needed to supply the military, industrial, and essential civilian needs of the United States during a national emergency, and that are not found or produced in the U.S. in sufficient quantities to meet such need.

batteries are expected to continue rising at an exponential rate.⁵ In the future, up to 40% of critical materials in batteries may be supplied from recycled batteries according to the U.S. Department of Energy (DOE).⁶ Thus, there is a great opportunity to increase the recovery of critical materials by improving end-of-life management and recycling of batteries.

Batteries are also important in the nation's efforts to tackle climate change. First, batteries are essential to powering the nation's economy with clean, affordable, and resilient energy and transportation options. Economical and fast-charging batteries are important to spurring adoption of all-electric and plugin-hybrid vehicles, while high-energy-density battery storage is needed for solar and wind power. Second, recycling batteries can also reduce environmental impacts associated with their life cycle. Recycling batteries helps prevent valuable materials from going into the waste stream, reduce greenhouse gases that would be generated and energy needed to manufacture new batteries, and reduce the extraction of valuable and limited virgin resources.

Batteries can also pose a hazard if managed incorrectly. Once the device is broken or the batteries lose their charge, they can end up in the regular waste or curbside recycling bins, which can result in dangerous situations. Batteries can start fires throughout the municipal waste management system, in transportation and at transfer facilities, to materials recycling facilities, scrap yards, and landfills, causing air pollution issues in already overburdened communities and threatening worker and first responder safety. In addition to the fire danger, when discarded improperly, such as in household trash or curbside recycling, critical materials inside batteries are lost and cannot be recycled into new batteries.

The Bipartisan Infrastructure Law makes significant investments to address batteries in a holistic manner from producing critical minerals, sourcing materials for manufacturing, and even

⁵ Argus. (2017). The lithium market - the future is electric. <https://www.argusmedia.com/-/media/Files/white-papers/the-lithium-market-the-future-is-electric.ashx>

⁶ <https://www.energy.gov/eere/articles/harnessing-power-battery-rdd-battle-climate-change>

recycling critical materials without new extraction/mining. For DOE, it provided more than \$7 billion investment in the supply chain for batteries, including investments in the end-of-life infrastructure for batteries from the collection, safe storage and transportation, recycling, and second-use. For EPA, it provided \$10 million in funding for EPA to develop battery collection best practices that may be implemented by state, tribal, and local governments, including U.S. territories and the District of Columbia. It also provided \$15 million in funding for EPA to establish a program to develop voluntary labeling guidelines for batteries and other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. EPA and DOE are closely coordinating to carry out these investments to support battery collection and recycling infrastructure and communication materials. Together, EPA's and DOE's battery collection and recycling investments will help make it easier for the American people to recycle their batteries through proper channels and recover critical materials from batteries to strengthen the nation's battery supply chain.

IV. Request for Information

Over the course of 2022, ORCR will be hosting virtual meetings across the country with interested stakeholders to inform the development of the new programs established by the Bipartisan Infrastructure Law. This RFI and the other RFIs aim to supplement those planned consultations and provide all interested individuals and organizations with the opportunity to share their perspectives on barriers and opportunities related to solid waste management infrastructure. EPA has also begun a series of strategies on building a circular economy for all, starting with the National Recycling Strategy.⁷ EPA is intending to develop a strategy to increase the circularity of electronics, including batteries, in order to reduce the life cycle environmental impact of these materials and increase the circularity of critical minerals. The information gathered here may also support that effort.

⁷ <https://www.epa.gov/recyclingstrategy/strategies-building-circular-economy-all>

EPA has already endeavored to learn about the proper end-of-life management of batteries from its previous work to increase the recycling of batteries or electronics. EPA's Sustainable Electronics Challenge⁸ has encouraged electronics manufacturers, brand owners and retailers reduce environmental impacts across the lifecycle of electronic products. This includes the increased collection and recycling of electronics and their batteries to recover critical minerals. EPA also has held several educational webinars⁹ on the hazards batteries pose in the waste stream and released a report in July 2021 which explored the growing number of fires from lithium batteries during waste management, *An Analysis of Lithium-ion Waste Fires in Waste Management and Recycling*¹⁰. In October 2021, EPA held a two-day virtual stakeholder workshop aimed at addressing the issues caused by improperly disposed lithium-ion batteries, improving collection logistics, labeling, public education, design for recycling, and strategies to promote the recycling of either small format consumer electronic batteries or large format (electric vehicle, stationary source) batteries.¹¹ The lithium-ion battery workshop discussions have provided initial information and identified additional areas for stakeholder input that would be of help to the Bipartisan Infrastructure Law battery efforts.

To build on this information and better inform the development of best practices with respect to the collection of batteries to be recycled and establish a program to promote battery recycling through the development of voluntary labeling guidelines for batteries and communication materials under the Bipartisan Infrastructure Law, EPA has identified some key information categories on which stakeholder insights would be most helpful:

- Scope and prioritization of the battery collection best practices

⁸ <https://www.epa.gov/smm-electronics/sustainable-materials-management-smm-electronics-challenge#01>

⁹ <https://www.epa.gov/smm/sustainable-materials-management-smm-web-academy-webinar-introduction-lithium-batteries-and>

¹⁰ <https://www.epa.gov/recycle/importance-sending-consumers-used-lithium-ion-batteries-electronic-recyclers-or-hazardous>

¹¹ Summary Report for the EPA Lithium-Ion Battery Disposal and Recycling Stakeholder Workshop in October 2021, <https://www.epa.gov/recycle/workshop-lithium-ion-batteries-waste-stream>

- Understanding the battery collection and recycling system
- Information on labeling guidelines for batteries regarding reuse and recycling
- Information on battery reuse and recycling communication materials directed towards battery producers and consumers

Following each information category, EPA has included a list of suggested questions as a helpful guide for consideration in preparing comments. EPA provides these questions simply to guide the type of comments the Agency would find useful to help inform the battery collection best practices and labeling efforts. EPA is interested in information about small format, large format, and industrial batteries. EPA encourages commenters to provide any other feedback or information that EPA should consider in developing best practices for the collection of batteries to be recycled, voluntary labeling guidelines for batteries, and communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. EPA also requests that commenters include, wherever possible, supporting data or other qualitative information such as information about the barriers and challenges to collecting batteries for recycling and battery labels, successful battery collection programs and battery labels, and details on measurable benefits for industry, government, or consumers.

A. Suggestions on the Scope and Prioritization of the Battery Collection Best Practices

The suggested questions below provide an opportunity for all commenters to provide input on the battery types, such as small consumer batteries and large format batteries (including electric vehicles and grid energy storage) and battery chemistries, including but not limited to: lithium based, nickel-metal hydride, and other battery chemistries to inform the scope of the best practices. For lead-acid batteries, EPA is aware that these batteries are manufactured with antimony, a critical mineral, and are currently recycled at a high rate especially from vehicles; thus, lead-acid batteries may not need to be considered in the battery collection best practices. However, EPA is interested in information on other lead-acid batteries such as small, sealed lead acid batteries that may not be recycled at a high rate. The suggested questions also are seeking

information to inform the prioritization of which battery types/chemistries the collection best practices should target that will help increase the recovery of critical minerals, while also ensuring safe used battery recycling. EPA is also interested in any existing studies or reports with background information on batteries and their collection and recycling. EPA is interested in both batteries embedded in devices and standalone batteries. Commenters, however, should feel free to provide whatever pertinent information that would be useful to EPA as we consider the scope of the battery collection best practices. Commenters should clearly indicate whether the comment pertains to batteries embedded in devices and/or standalone batteries.

- Please share any existing studies and reports with background information on:
 - Battery types (e.g., small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries that are manufactured with critical materials and/or critical minerals.¹²
 - Battery types (e.g., small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries currently being collected and recycled; numbers of each battery type/chemistry recycled and disposed in the U.S. as well as number of batteries exported for recycling.
 - Battery types (e.g., small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries that best serve as feedstock into the manufacture of non-battery products or other applications.
 - General geographic location of the battery recycling markets (e.g., percentages of batteries that go for recycling by geographic region, exported to certain countries, or by specific companies).

¹² U.S. Geological Survey 2022 List of Critical Minerals, <https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals>

- What battery types (such as small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries have caused concerns when disposed of improperly?
- What types of battery handlers in the reuse and recycling system should be included in the best practices for the collection of batteries for recycling?
- What are the recycling markets for batteries? Which battery types/chemistries serve as feedstock into manufacturing new batteries?
- How do state, tribal, and local governments, including U.S. territories and the District of Columbia, handle battery collection and recycling (e.g., under a specific policy, as part of an electronics waste program, etc.)? Please provide information and a description of the policy or program. What impact has the policy or program had on battery collection and recycling?
- What barriers are state, tribal, and local governments, including U.S. territories and the District of Columbia, facing regarding battery collection and recycling (e.g., lack of consumer participation, fire hazards, consumer mismanagement, lack of training for facility workers, battery removability) and what resources are needed to overcome them?
- What state, tribal and local programs, including U.S. territories and the District of Columbia, have been successful in achieving high recovery of critical minerals from end-of-life batteries?
- Do state, tribal, and local governments, including U.S. territories and the District of Columbia, find common problems in educating the public about how batteries are collected?
- Do state, tribal, and local governments, including U.S. territories and the District of Columbia, find common problems at battery collection? What existing best practices have been developed to address these common issues? How have these best practices increased safe battery recycling?

- What problems have battery collection facilities encountered when handling and processing batteries?
- Are there any evidence-based best practices for the collection of end-of-life batteries? If so, which organizations have developed them, what do commenters find useful about these practices, and what could be improved about them?
- Do any communication materials exist on evidence-based battery collection best practices? If so, what could EPA improve about these communication materials. If not, what communication materials can EPA develop for state, tribal, and local governments, including U.S. territories and the District of Columbia, on battery collection best practices that would be useful for battery collection handlers and workers?
- Is battery recycling accessible for residents in environmental justice communities? Do collection practices differ between urban, suburban, or rural areas?
- What resources are needed to provide access and capacity building for residents in environmental justice communities without battery collection programs?

B. Understanding the Battery Collection and Recycling System

To help EPA better understand the end-of-life collection and management of batteries, the Agency would like information on the key entities in the battery recycling process, including all the intermediary facilities in the process. In addition to consumer batteries, EPA also is interested in information on electric vehicle and grid energy storage batteries. Suggested questions to consider for comment submission include:

- What are all of the steps in the battery recycling process, from point of collection to final integration into a new product?
- What are the barriers to recycling and reuse of batteries? What are the barriers to recycling of small consumer batteries (e.g., removability of the batteries from the devices)? What are the barriers unique to recycling of large batteries, including those for grid energy storage and vehicle batteries?

- What are the barriers to maximizing the recovery of critical materials and minerals during the collection and recycling process? Where are losses of critical materials occurring in the battery collection and recycling system? Where are their opportunities to improve the recovery of critical materials in the battery collection and recycling system?
- What are the concerns and challenges with battery recycling faced by each entity in the battery recycling chain?
- How are batteries collected in different areas—at collection facilities, special household hazardous waste collection, or electronics recycling events? What types of batteries (e.g., small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries are targeted for collection? Are there any negative impacts on the community from these battery collection sites?
- What types of facilities collect batteries in different areas (e.g., retail stores; government facilities, including libraries, fire stations, or other government facilities; electronic waste service businesses, scrap yards, and car dealerships, etc.)? What battery types/chemistries are collected? What collection methods are used (e.g., one bin for all battery types, multiple bins for different types of batteries, etc.)? What practices do collection sites utilize to safely accumulate batteries on site? What guidelines or requirements (e.g., tape battery ends or place in plastic bags, etc.) do consumers need to follow to drop off their used batteries? What are the costs and/or service fees charged for battery collection/recycling? When do original equipment manufacturers take back or retain ownership of batteries at end-of-life?
- How are batteries that are damaged, defective, or recalled managed when collected?
- What packing requirements are there for collected used batteries to be accepted by the next entity in the battery recycling chain?
- What businesses serve as sorters and/or reuse and repair facilities (e.g., are they the same facilities that recycle electronic devices and electronic waste accessories)? What sorting

methods are used, such as by hand, technology, etc.? How has the sorting method impacted the battery types recycled? What practices and trainings are utilized at battery sorting and reuse and repair facilities to protect workers from the hazards of handling and processing used batteries?

- Which battery types/chemistries are sorted for reuse and repair versus recycling? What criteria determines the acceptability for reuse and repair? Which used batteries are designated for second life or refurbished? What are the markets for second life and refurbished batteries? What industry standards or other standards/specifications must be met for batteries that are repurposed into other uses?
- What businesses serve as initial battery recycling pre-processing facilities (e.g., are there businesses that specialize in battery recycling or is it done at the same facilities where electronic devices are recycled)? How many of these facilities operate in the U.S.? What battery types/chemistries are taken for pre-processing? What pre-processing technologies are utilized at these facilities, (e.g., crushing, disassembly)? How does the pre-processing technology impact the amount of the materials recovered from the used batteries?
- How many battery recycling facilities are there in the United States? What types of batteries (e.g., small consumer batteries, large format vehicle and grid energy storage batteries, and industrial batteries) and chemistries are recycled at these facilities? What form of battery materials are accepted for recycling (e.g., disassembled batteries, crushed batteries, intact batteries, etc.)? What technologies are utilized to recycle batteries? How does the recycling technology impact the amount of materials recovered from the used batteries?

C. Information on Battery Labeling Guidelines

Under the Bipartisan Infrastructure Law, EPA is required to develop voluntary labeling guidelines for batteries and other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. To undertake this

effort, the Agency would like to obtain input on the scope of the development of voluntary labeling guidelines and understand existing battery labeling guidelines. The Agency also would like to obtain input from commenters on the scope of the development of other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries as well as information on the existing communication materials that have been developed on the end-of-life management of batteries. In addition to labeling guidelines and communication materials for consumer batteries, EPA also is interested in communication materials for electric vehicle and grid energy storage batteries. Suggested questions to consider for comment submission on labeling practices/requirements include:

Scope of Voluntary Labeling Guidelines

- What should be the goals of developing voluntary labeling guidelines for batteries (e.g., increase critical minerals recovery, provide information to consumers about recycling and where they should bring their batteries; provide information to sorters and/or recyclers about the chemistry in the batteries; provide information to entities in the vehicle management chain – dealerships, repair shops, auction houses, dismantlers, entities that repurpose electric vehicle batteries, refurbishers, and scrap yards about vehicle battery recycling)?
- What information should be included on the label to achieve those goals (e.g., instructions on how to locate a collection or recycling facility, chemistry of batteries, symbol for not throwing batteries in the trash, curbside recycling bin or other inappropriate location)? How can this information be conveyed clearly to non-English speakers?
- Where should a label be placed (on battery, on device, on packaging, in store, or other location)?
- What considerations should be accounted for in developing labeling guidelines for batteries that will be widely adopted for use by battery producers/manufacturers?

Knowledge of Existing Battery Labeling Guidelines

- What do consumers find confusing with current battery labels? Please share any evidence-based consumer studies that have been conducted on battery labels. How can the battery labels be improved?
- What are the barriers to battery labeling for the manufacturers and for the collections and sorting facilities?
- What state, tribal, and local governments including U.S. territories and the District of Columbia, industry, standard-setting organizations, international organizations, and countries have existing battery labeling guidelines? What are the labeling practice/requirements/guidelines for the battery chemistry composition or the end-of-life management, including whether they are voluntary or mandatory?
- How long have the labeling practices/guidelines been in existence?
- What is the use/adoption rate by battery manufacturers? Why are some existing labeling standards adopted by battery manufacturers and not others? What are the barriers for adopting other labeling standards?
- How have these existing labeling programs impacted battery recycling?
- How are the labeling practices/requirements/guidelines administered? Are they administered by a specific organization or other mechanism? If administered by an organization, how does it operate, including how is it funded for its maintenance and operations?

D. Communication Materials for Battery Producers and Consumers About the Reuse and Recycling of Critical Materials from Batteries

Under the Bipartisan Infrastructure Law, EPA also is required to develop other forms of communication materials for battery producers and consumers about the reuse and recycling of critical materials from batteries. To undertake this effort, the Agency would like to understand the existing communication materials that have been developed on the reuse and recycling of

critical materials from batteries geared toward battery producers and consumers. EPA also would like to understand the existing communication materials that have been developed to help consumers on how and where to recycle their batteries. In addition to communication materials about small consumer battery recycling, EPA also is interested in existing communications materials about large format (electric vehicle and grid energy storage) batteries, and industrial batteries. Suggested questions to consider for comment submission on existing communication materials on the reuse and recycling of critical materials from batteries include:

- How do consumers think about reusing and recycling used batteries (e.g., in the same manner as household recyclables or electronic wastes)?
- How do battery producers think about reusing and recycling critical minerals from used batteries? Have there been specific efforts focused on communicating about reuse and recycling of used batteries with battery producers?
- EPA is aware of some battery reuse and recycling communication materials that have been developed, including in Minnesota - Be Our Battery Hero¹³, Larimer County, Colorado - Be Alert! Divert Hidden Batteries¹⁴, and the Rechargeable Battery Recycling Corporation (RBRC) - Avoid the Spark¹⁵. What other existing communication materials on the end-of-life management of batteries have been developed by federal, state, tribal, and local governments including U.S. territories and the District of Columbia, industry, and EU and other international countries and organizations? Please include a description of the key outreach components, target audiences, and the format of the materials (e.g., toolkits, print resources, images, videos, social media messages, etc.). What do commenters find most useful about these existing communication materials? What

¹³ <https://recyclingandenergy.org/wp-content/uploads/2021/08/Be-A-Battery-Hero-Informational.pdf>

¹⁴ <https://www.larimer.org/solidwaste/batteries>

¹⁵ <https://www.call2recycle.org/avoid-the-spark/#campaign-highlights>

evidence and data are available to demonstrate the impacts from these communication materials?

- What communication materials can EPA develop to assist state, tribal, and local governments, including U.S. territories and the District of Columbia, about battery collection and recycling to increase the recovery of critical minerals from batteries? What information/messages should be included in the communication materials for battery producers? For consumers? What resources do state, tribal, and local governments, including U.S. territories and the District of Columbia, need to educate and elicit positive battery producer and consumer behavior changes for used batteries?
- The Agency is aware of websites, such as Earth911 and RBRC's Call2recycle.org, that can provide consumers and businesses with information on managing their used batteries. What other tools and resources have been developed by federal, state, tribal, and local governments including U.S. territories and the District of Columbia, industry, non-profit organizations, EU and other international organizations and countries to help consumers, businesses, and the entities in the battery reuse and recycling chain manage used batteries? Please include information and a description of the tools and resources (e.g., battery identification guides, call centers, battery collection locators, mobile phone applications, social media tools, etc.). What evidence and data are available to demonstrate the impacts from these tools and resources?

V. Disclaimer and Important Note

This RFI is issued solely for information, research and planning purposes and does not constitute a Request for Proposals (RFP) or a Request for Applications (RFA). Any information obtained as a result of this RFI is intended to be used by EPA on a non-attribution basis to support EPA's efforts to develop best practices for the collection of batteries to be recycled, voluntary labeling guidelines for batteries, and communication materials for battery producers

and consumers about the reuse and recycling of critical materials from batteries. This RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. EPA will review and consider all responses in its development of battery collection best practices and creation of voluntary battery labeling guidelines that are the subject of this request. This RFI does not represent any award commitment on the part of EPA, nor does it obligate EPA to pay for costs incurred in the preparation and submission of any responses.

Dated: June 3, 2022.

Carolyn Hoskinson,

Director, Office of Resource Conservation and Recovery.

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